

I love coffee. (In fact I'm at a coffee shop as I write this.) But there have been numerous conflicting reports about whether coffee is good or bad for you. Some have to do with the effects of caffeine, and some with coffee itself. So, let's start with the basics:



The Physiology of Caffeine

Your brain is a big bundle of nerves. When nerves fire, they communicate with each other using chemicals called *neurotransmitters* (some of which are stimulating and some of which are calming), and they leave behind a byproduct called *adenosine*.

Like the neurotransmitters, adenosine fits into specific *receptors* in your brain, like a lock and key. When those receptors get too full, your brain says, *hey, you've been awake too long. Time to go to sleep.*

But caffeine is sneaky. It looks like adenosine, but it isn't - so it fits into the receptors, but it doesn't activate them. That means the adenosine build-up doesn't trigger exhaustion, and the stimulating neurotransmitters (like adrenaline) that were already present can run amok.

The "Plus" Side of Caffeine:

- Once in a while, if you have to cram for an exam or finish a major project, it'll work beautifully.
- Coffee in general has been associated with a decreased risk of liver cirrhosis and liver cancer. No mechanisms have been proposed to explain that one, but it might have something to do with the fact that the caffeine increases the effects of adrenaline (because it's not hindered by adenosine), and adrenaline breaks down fat, and fat gets processed in the liver. (But that's just a guess.)

The "Minus" Side of Caffeine:

- Eventually your body will create more adenosine receptors so that the effects of caffeine are nullified. It takes about a week to 12 days for most people to adjust to caffeine intake, at which point you'll have to bump it up to achieve the same effect.
- Caffeine doesn't directly increase adrenaline, but it does allow it to work unhindered. This can mean increased blood pressure, heart rate, palpitations, blood flow to the muscles, irritability and/or anxiety.
- Your body will also decrease its adrenaline receptors after a while, so that you won't respond like you used to. This will force your adrenal glands (<http://www.drLaurendeville.com/conditions/adrenal-fatigue/>) to work harder for the same effects. Depending on how exhausted you are, it's sort of like whipping a dead horse.
- Anytime you're messing with receptors in your body, withdrawal has got to be slow. Otherwise those receptors that are used to being filled are suddenly going to be lonely. And angry. (Hence the massive headache.)

The Plus Side of Coffee (all caffeine aside)

- Coffee is a powerful antioxidant. This may be why coffee consumption is linked with decreased risk of Parkinson's and Alzheimer's Disease. Chronic diseases of the Western world are nearly all associated with oxidative damage, so you really can't get enough antioxidants.
- Coffee contains nutrients that help to regulate blood sugar. For this reason it's been linked in numerous studies with decreased risk of Type 2 Diabetes (<http://www.drLaurendeville.com/conditions/diabetes/>). (However, this benefit is more than nullified if you drink, say, caramel macchiatos... or add six packets of sugar.)

So given all that, what's my conclusion? Everything in moderation. (Well, maybe not everything, but you get the idea.) Don't overdo it, and don't overdo the sugar in your coffee (and perhaps if you have trouble with insomnia or hypertension, you might want to skip it altogether).

That said... my French press dark roast makes my morning, I'm not gonna lie.

For more on this topic, see here: https://www.lef.org/magazine/mag2012/sep2012_Protective-Effects-Of-Coffee_01.htm

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